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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,350	10/23/2003	Conor J. Cunningham	MSFT-2849/306818.1	8548
41505 7590 06/18/2007 WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION) CIRA CENTRE, 12TH FLOOR 2929 ARCH STREET PHILADELPHIA, PA 19104-2891			EXAMINER TRUONG, CAM Y T	
			ART UNIT 2162	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/692,350	Applicant(s) CUNNINGHAM ET AL.	
	Examiner Cam Y T. Truong	Art Unit 2162	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.  | 6) <input type="checkbox"/> Other: ____.                          |

### **DETAILED ACTION**

1. Applicant has filed the Rule 131 Declaration on 2/28/2007.

Claims 1-14 are pending in this Office Action.

### ***Response to Arguments***

2. Applicant's arguments filed 2/28/2007 have been fully considered but they are not persuasive.

The Declaration 1.131 filed on 2/28/2007 under 37 CFR 1.131 has been considered but is ineffective to overcome the Murthy reference.

- a. Applicant is attempting to show conception of invention prior to September 5, 2003, the effective date of Murthy coupled with diligence from just prior to the reference date until October 23, 2003, the effective filing date of the instant application.

#### ***I. Conception***

*The affidavit or declaration and exhibits must clearly explain which facts or data applicant is relying on to show completion of his or her invention prior to the particular date. Vague and general statements in broad terms about what the exhibits describe along with a general assertion that the exhibits describe a reduction to practice "amounts essentially to mere pleading, unsupported by proof or a showing of facts" and, thus, does not satisfy the requirements of 37 CFR 1.131(b). In re Borkowski, 505 F.2d 713, 184 USPQ 29 (CCPA 1974). Applicant must give a clear explanation of the exhibits pointing out exactly what facts are established and relied on by applicant. 505 F.2d at 718-19, 184 USPQ at 33. See also In re Harry, 333 F.2d 920, 142 USPQ 164 (CCPA 1964) (Affidavit "asserts that facts exist but does not tell what they are or when they occurred."). See MPEP 715.07 General Requirements*

b. To establish conception, the declaration states in numbered paragraph 6 that prior to September 5, 2003, the other inventors and I invented the subject of the '350 application. Note that pointing "the initial internal proposal document dated July 9, 2003 as Appendix A and the final functional specification document dated September 3, 2003 as Appendix B and the internal proposal document dated was created to explain ideas to others on the development" as support of conception, this is a vague and general statement, which describes in broad terms what the show. It is no more than a general statement that the Appendixes support the conception. This amounts to mere pleading. This is not a clear explanation. Thus applicant has not met his burden of clearly showing how the submitted evidence supports conception of the invention.

c. The examiner has reviewed the exhibits and finds that they are sufficiently detailed that they may support conception given a properly structured affidavit, which provides a clear explanation of how the exhibits establish conception of the claimed invention.

## *II. Diligence*

d. Where conception prior to the reference date has not been clearly established diligence need not be considered [See MPEP 715.07(a).] However,

in the interest of expediting prosecution the Examiner will provide further guidance regarding the deficiencies in the attempted showing of diligence.

e. The critical period for which diligence must be shown is from just before 9/5/2003 (the effective date of Murthy) until 10/23/2003 the effective filing date of the instant application. It appears that the evidence submitted is insufficient to establish diligence from a date prior to the date of reduction to practice of the reference to a constructive reduction to practice of the instant invention. The entire period during which diligence is required must be accounted for by either affirmative acts or acceptable excuses. [See MPEP 2138.06].

f. Where conception occurs prior to the date of the reference, but reduction to practice is afterward, it is not enough merely to allege that applicant or patent owner had been diligent. *Ex parte Hunter*, 1889 C.D. 218, 49 O.G. 733 (Comm'r Pat. 1889). Rather, applicant must show evidence of facts establishing diligence. (MPEP 715.07(a))

g. Applicant failed to provide any evidence for establishing diligence during the period of 7/9/2003 until 10/23/2003.

h. If applicant wishes to rely on attorney diligence a statement from the attorney may be needed. See MPEP 2138.06.

For the above reasons, examiner believes that the prior art Murthy et al is considered as a proper prior art and the rejection of the last office action is proper.

***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-7 are rejected under 35 U.S.C.101 because the language of the claim raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practice application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C 101.

Claims 1-7 recite "a computer system or a hardware/software interface system". The claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3-8, 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murthy et al (or hereinafter "Murthy") (US 2005/0055355) in view of Schwarzhoff et al (or hereinafter "Schwarzhoff") (US 6591260).

As to claim 1, Murthy teaches the claimed limitations:

"a data store comprising a table of objects" as a relational database comprising a table of XML documents as objects (fig. 1);

"pre-computed values, the pre-computed values comprising information to discern objects based on type pursuant to a hierarchical search" as the document identifier refers to the document identifier that is assigned to the XML documents. Each XML document will have a unique DOCID value. PID refers a unique identifier for a path. At 220 and 22, hierarchical information and type/value information for the node is stored in the entry for the node in the Path\_table. The hierarchical information for the XML data is tracked by viewing the XML document as a tree. The following example XPath expression searches for the content(s) of one or more XML fragments corresponding to the location path "/a/b/c/d". XPath: /a/b/c/d. The above information shows that each value of each document to identify each document based on a path type to a hierarchical search (page 2, [0025]; page 3, [0030]; page 5, [0064]).

"each object having an associated type in a hierarchy of types" as each document having a path type in a tree of types (figs 3C, 4, [0030]);

"each type having an identifier" as each path type has an identifier (fig. 4);

"a hardware/software interface system for manipulating the plurality of objects and pre-computed values" as a hardware/software interface system as shown in fig. 7 is used to manage XML documents that is stored in a database [0021]).

Murthy does not explicitly teach the claimed limitation "being extensible using an inheritance extension".

Schwarzhoff teaches Polymorphism allows a document type to be explicitly defined as an extension of a pre-existing document type (col. 2, lines 32-40).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Schwarzhoff's teaching Polymorphism allows a document type to be explicitly defined as an extension of a pre-existing document type to Murthy's system in order to retrieve or access different types of documents in a database system quickly and further improve the performance of data extraction and further to allow document types to evolve in order to facilitate new transactions, while preserving the integrity of the existing document types and the transactions they support.

As to claims 3 and 10, Murthy teaches the claimed limitation "wherein a type can be a subtype of another type" as (fig. 4)



As to claims 4 and 11, Murthy teaches the claimed limitation “wherein the data store further comprises a type path for each object” as (figs. 4&5, page 4, paragraph [0048, 0040]);

As to claims 5 and 12, Murthy teaches the claimed limitation “wherein the data store comprises a computed column for storing each type path” as (page 2, [0024]).

As to claims 6 and 13, Murthy teaches the claimed limitations “ wherein each type path comprises a variable-length encoded value” as (page 3, [0026]).

As to claims 7 and 14, Murthy teaches the claimed limitations” wherein each variable-length encoded value corresponds to a hierarchy level of the type of the associated object” as (page 3, paragraph [0026, 0030]).

As to claim 8, Murthy teaches the claimed limitations  
“a hardware/software interface system capable of manipulating a plurality of objects” as a hardware/software interface system as shown in fig. 7 is used to manage XML documents that is stored in a database [0021]);

“pre-computed values; pre-computed values comprising information to discern objects based on type pursuant to a hierarchical search” as the document identifier refers to the document identifier that is assigned to the XML documents. Each XML document will have a unique DOCID value. PID refers a unique identifier for a path.

At 220 and 22, hierarchical information and type/value information for the node is stored in the entry for the node in the Path\_table. The hierarchical information for the XML data is tracked by viewing the XML document as a tree. The following example XPath expression searches for the content(s) of one or more XML fragments corresponding to the location path "/a/b/c/d". XPath: /a/b/c/d. The above information shows that each value of each document to identify each document based on a path type to a hierarchical search (page 2, [0025]; page 3, [0030]; page 5, [0064]).

"the objects and pre-computed values comprises within a table" as XML documents and document identifiers as values are stored in a table of relational database (fig. 2&5, paragraph [0033]),

"each object having an associated type in a hierarchy of types" as each document having a path type in a tree of types (figs 3C, 4, [0030]);

"each type having an identifier" as each path type has an identifier (fig. 4).

Murthy does not explicitly teach the claimed limitation "being extensible using an inheritance extension".

Schwarzhoff teaches Polymorphism allows a document type to be explicitly defined as an extension of a pre-existing document type (col. 2, lines 32-40).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Schwarzhoff's teaching Polymorphism allows a document type to be explicitly defined as an extension of a pre-existing document type to Murthy's system in order to retrieve or access different types of documents in a database system quickly and further improve the performance of data extraction and

further to allow document types to evolve in order to facilitate new transactions, while preserving the integrity of the existing document types and the transactions they support.

7. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suver (US 6016497) in view of Murthy and further in view of Shwarzhoff.

As to claim 1, Suver teaches the claimed limitations:

“a data store comprising a table of objects” as storing data items as objects in a database (col. 9, lines 15-45);

“each object having an associated type in a hierarchy of types” as different types of data items indicate each item having an associated type (col. 9, lines 50-52);

“each type having an identifier” as a column data type identifier and text type identifier (col. 9, lines 24-25; col. 10, lines 66-67);

“a hardware/software interface system for manipulating the plurality of objects” as a hardware/software interface system as shown in fig. 1 is used to execute data items that is stored in a database (col. 4, lines 5-15; col. 5, lines 62-67; col. 6, lines 20-50).

Suver does not explicitly teach the claimed limitation “pre-computed values comprising information to discern objects based on type pursuant to a hierarchical search; pre-computed values; being extensible using an inheritance extension”.

Murthy teaches the document identifier refers to the document identifier that is assigned to the XML documents. Each XML document will have a unique DOCID

value. PID refers a unique identifier for a path. At 220 and 22, hierarchical information and type/value information for the node is stored in the entry for the node in the Path\_table. The hierarchical information for the XML data is tracked by viewing the XML document as a tree. The following example XPath expression searches for the content(s) of one or more XML fragments corresponding to the location path "/a/b/c/d". XPath: /a/b/c/d. The above information shows that each value of each document to identify each document based on a path type to a hierarchical search (page 2, [0025]; page 3, [0030]; page 5, [0064]).

Schwarzhoff teaches Polymorphism allows a document type to be explicitly defined as an extension of a pre-existing document type (col. 2, lines 32-40).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Schwarzhoff's teaching Polymorphism allows a document type to be explicitly defined as an extension of a pre-existing document type Murthy's teaching of XML documents and document identifiers as values are stored in a table of relational database and the document identifier refers to the document identifier that is assigned to the XML documents. Each XML document will have a unique DOCID value. PID refers a unique identifier for a path. At 220 and 22, hierarchical information and type/value information for the node is stored in the entry for the node in the Path\_table. The hierarchical information for the XML data is tracked by viewing the XML document as a tree. The following example XPath expression searches for the content(s) of one or more XML fragments corresponding to the location path "/a/b/c/d". XPath: /a/b/c/d to Suver's system in order to retrieve or

access different types of documents in a database system quickly and further improve the performance of data extraction and further to allow document types to evolve in order to facilitate new transactions, while preserving the integrity of the existing document types and the transactions they support.

As to claims 2 and 9, Suver teaches the claimed limitation "wherein each type is a user-defined type (UDT)" as user defined types (col. 4, lines 6-10).

As to claims 3 and 10, Suver teaches the claimed limitation "wherein a type can be a subtype of another type" as (col. 20, lines 1-10).

As to claims 4 and 11, Suver teaches the claimed limitation "wherein the data store further comprises a type path for each object" as (col. 4, lines 6-20).

As to claims 5 and 12, Suver discloses the claimed limitation subject matter in claim 1, except the claimed limitation "wherein the data store comprises a computed column for storing each type path". Murthy teaches storing XML documents columns of relational database table (page 2, [0024]).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Murthy's teaching of storing XML documents in existent or newly created columns of relational database to Suver in order to increasing the flexibility and power with which the data may be accessed, it also

increases the complexity of the application, both from the perspective of the designer and the perspective of the user and to access data using the relatively simple OS file API.

As to claims 6 and 13, Suver discloses the claimed limitation subject matter in claim 1, except the claimed limitations " wherein each type path comprises a variable-length encoded value".

Murthy teaches path varchar corresponding level of the type of the object (page 3, paragraph [0026, 0030]).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Murthy's teaching of path varchar to Surve's system in order to provide an application for storing XML documents in existent or newly created columns of a relational database table or in external files.

As to claims 7 and 14, Surve discloses the claimed limitation subject matter in claim 1, except the claimed limitations" wherein each variable-length encoded value corresponds to a hierarchy level of the type of the associated object". Murthy teaches path varchar corresponding level of the type of the object (page 3, paragraph [0026, 0030]).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Murthy's teaching of path varchar to Surve's system in order to provide an application for storing XML documents in existent or newly

created columns of a relational database table or in external files.

As to claim 8, Suver teaches the claimed limitations

“a hardware/software interface system capable of manipulating a plurality of objects” as shown in fig. 1 is used to maintain data items that is stored in a database (fig. 14, col. 4, lines 5-15; col. 5, lines 62-67; col. 6, lines 20-50).

“each object having an associated type in a hierarchical of types” as different types of data items indicate each item having an associated type (col. 9, lines 50-52);

“ each type having an identifier” as a column data type identifier and text type identifier (col. 9, lines 24-25; col. 10, lines 66-67).

Suver does not explicitly teach the claimed limitation “pre-computed values, pre-computed values comprising information to discern objects based on type pursuant to a hierarchical search; pre-computed values; the objects and pre-computed values comprised with a table; being extensible using an inheritance extension”.

Murthy teaches XML documents and document identifiers as values are stored in a table of relational database (fig. 2&5, paragraph [0033]). Murthy further teaches the document identifier refers to the document identifier that is assigned to the XML documents. Each XML document will have a unique DOCID value. PID refers a unique identifier for a path. At 220 and 22, hierarchical information and type/value information for the node is stored in the entry for the node in the Path\_table. The hierarchical information for the XML data is tracked by viewing the XML document as a tree. The following example XPath expression searches for the content(s) of one or

more XML fragments corresponding to the location path "/a/b/c/d". XPath: /a/b/c/d.

The above information shows that each value of each document to identify each document based on a path type to a hierarchical search (page 2, [0025]; page 3, [0030]; page 5, [0064]).

Schwarzhoff teaches Polymorphism allows a document type to be explicitly defined as an extension of a pre-existing document type (col. 2, lines 32-40).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Schwarzhoff's teaching Polymorphism allows a document type to be explicitly defined as an extension of a pre-existing document type and Murthy's teaching of XML documents and document identifiers as values are stored in a table of relational database and the document identifier refers to the document identifier that is assigned to the XML documents. Each XML document will have a unique DOCID value. PID refers a unique identifier for a path. At 220 and 22, hierarchical information and type/value information for the node is stored in the entry for the node in the Path\_table. The hierarchical information for the XML data is tracked by viewing the XML document as a tree. The following example XPath expression searches for the content(s) of one or more XML fragments corresponding to the location path "/a/b/c/d". XPath: /a/b/c/d to Suver's system in order to retrieve or access different types of documents in a database system quickly and further improve the performance of data extraction and further to allow document types to evolve in order to facilitate new transactions, while preserving the integrity of the existing document types and the transactions they support.



8. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suver (US 6016497) in view of Murthy and further in view of Seyrat et al (or hereinafter "Seyrat") (US 2004/0068696).

As to claim 1, Suver teaches the claimed limitations:

"a data store comprising a table of objects" as storing data items as objects in a database (col. 9, lines 15-45);

"each object having an associated type in a hierarchy of types" as different types of data items indicate each item having an associated type (col. 9, lines 50-52);

"each type having an identifier" as a column data type identifier and text type identifier (col. 9, lines 24-25; col. 10, lines 66-67);

"a hardware/software interface system for manipulating the plurality of objects" as a hardware/software interface system as shown in fig. 1 is used to execute data items that is stored in a database (col. 4, lines 5-15; col. 5, lines 62-67; col. 6, lines 20-50).

Suver does not explicitly teach the claimed limitation "the pre-computed value comprising information to discern objects based on type pursuant to a hierarchical search; pre-computed values; and being extensible using an inheritance extension".

Murthy teaches the document identifier refers to the document identifier that is assigned to the XML documents. Each XML document will have a unique DOCID value. PID refers a unique identifier for a path. At 220 and 22, hierarchical information and type/value information for the node is stored in the entry for the node

in the Path\_table. The hierarchical information for the XML data is tracked by viewing the XML document as a tree. The following example XPath expression searches for the content(s) of one or more XML fragments corresponding to the location path "/a/b/c/d". XPath: /a/b/c/d. The above information shows that each value of each document to identify each document based on a path type to a hierarchical search (page 2, [0025]; page 3, [0030]; page 5, [0064]).

Seyrat teaches using an inheritance extension (paragraph [0142]).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Murthy's teaching of the document identifier refers to the document identifier that is assigned to the XML documents. Each XML document will have a unique DOCID value. PID refers a unique identifier for a path. At 220 and 22, hierarchical information and type/value information for the node is stored in the entry for the node in the Path\_table. The hierarchical information for the XML data is tracked by viewing the XML document as a tree. The following example XPath expression searches for the content(s) of one or more XML fragments corresponding to the location path "/a/b/c/d". XPath: /a/b/c/d and Seyrat's teaching of using an inheritance extension to Suver's system in order to retrieve or access different types of documents in a database system quickly and further improve the performance of data extraction and further to allow document types to evolve in order to facilitate new transactions, while preserving the integrity of the existing document types and the transactions they support.

As to claims 2 and 9, Suver teaches the claimed limitation "wherein each type is a user-defined type (UDT)" as user defined types (col. 4, lines 6-10).

As to claims 3 and 10, Suver teaches the claimed limitation "wherein a type can be a subtype of another type" as (col. 20, lines 1-10).

As to claims 4 and 11, Suver teaches the claimed limitation "wherein the data store further comprises a type path for each object" as (col. 4, lines 6-20).

As to claims 5 and 12, Suver discloses the claimed limitation subject matter in claim 1, except the claimed limitation "wherein the data store comprises a computed column for storing each type path". Murthy teaches storing XML documents columns of relational database table (page 2, [0024]).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Murthy's teaching of storing XML documents in existent or newly created columns of relational database to Suver in order to increasing the flexibility and power with which the data may be accessed, it also increases the complexity of the application, both from the perspective of the designer and the perspective of the user and to access data using the relatively simple OS file API.

As to claims 6 and 13, Suver discloses the claimed limitation subject matter in claim 1, except the claimed limitations " wherein each type path comprises a variable-length encoded value".

Murthy teaches path varchar corresponding level of the type of the object (page 3, paragraph [0026, 0030]).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Murthy's teaching of path varchar to Surve's system in order to provide an application for storing XML documents in existent or newly created columns of a relational database table or in external files.

As to claims 7 and 14, Surve discloses the claimed limitation subject matter in claim 1, except the claimed limitations" wherein each variable-length encoded value corresponds to a hierarchy level of the type of the associated object". Murthy teaches path varchar corresponding level of the type of the object (page 3, paragraph [0026, 0030]).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Murthy's teaching of path varchar to Surve's system in order to provide an application for storing XML documents in existent or newly created columns of a relational database table or in external files.

As to claim 8, Suver teaches the claimed limitations

"a hardware/software interface system capable of manipulating a plurality of

objects" as shown in fig. 1 is used to maintain data items that is stored in a database (fig. 14, col. 4, lines 5-15; col. 5, lines 62-67; col. 6, lines 20-50).

"each object having an associated type in a hierarchical of types" as different types of data items indicate each item having an associated type (col. 9, lines 50-52);

" each type having an identifier" as a column data type identifier and text type identifier (col. 9, lines 24-25; col. 10, lines 66-67).

Suver does not explicitly teach the claimed limitation "pre-computed values, the pre-computed values comprising information to discern objects based on type pursuant to a hierarchical search; pre-computed values; the objects and pre-computed values comprised with a table; being extensible using an inheritance extension".

Murthy teaches XML documents and document identifiers as values are stored in a table of relational database (fig. 2&5, paragraph [0033]). Murthy further teaches the document identifier refers to the document identifier that is assigned to the XML documents. Each XML document will have a unique DOCID value. PID refers a unique identifier for a path. At 220 and 22, hierarchical information and type/value information for the node is stored in the entry for the node in the Path\_table. The hierarchical information for the XML data is tracked by viewing the XML document as a tree. The following example XPath expression searches for the content(s) of one or more XML fragments corresponding to the location path "/a/b/c/d". XPath: /a/b/c/d. The above information shows that each value of each document to identify each document based on a path type to a hierarchical search (page 2, [0025]; page 3, [0030]; page 5, [0064]).

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9. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murthy in view of Schwarzhoff and further in view of Chau et al (or hereinafter "Chau") (US 6643633).

As to claims 2 and 9, Murthy does not explicitly teach the claimed limitation "wherein each type is a user-defined type (UDT)". Chau teaches user defined types (col. 8, lines 30-35).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Chau's teaching of UDT to Murthy's system in order to provide powerful user-defined function to store and retrieve XML documents in XML columns as well as to extract XML element/attribute values.

### ***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

**Contact Information**

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cam Y T. Truong whose telephone number is (571) 272-4042. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Cam Y Truong  
Primary Examiner  
Art Unit 2162  
6/6/2007